

Claims

1. A system for communicating information between mobile units, the system comprising:

a plurality of mobile units, each unit comprising onboard multiple sensors, each sensor communicating with onboard means for processing inputs from sensors, using data fusion, the processing means in communication with means for wireless receiving and means for wireless transmitting of information, the processing means comprising means for selecting a path for communicating information, the path including at least communicating information from one of the mobile units to another mobile unit

2. The system of Claim 1 further comprising: using multi-sensor fusion information to establish in real time a unique location of each of at least some of the plurality of mobile units.

3. The system of Claim 2, wherein the at least some mobile units receive input information about the real time location of other mobile units in proximity, and wherein the means for selecting a communication path for each of the at least some mobile units uses the received input information to select the information communication path.

4. The system of Claim 1, wherein the information comprises diagnostic information about a mobile unit.

5. The system of Claim 1, wherein the information comprises information about an environment surrounding a mobile unit.

6. The system of Claim 1, wherein at least two of the mobile units each further comprise onboard means for playing an interactive electronic game, the game playing means communicating game information to the onboard means for receiving and transmitting of each of the respective at least two mobile units such that game information exchanged permits playing of an interactive game between parties in the at least two mobile units.

7. The system of Claim 1, further comprising means for playing an interactive game, said means generating game information, the game information communicated to a plurality of participating mobile units substantially simultaneously, said communication permitting participation in an interactive game by at least one party in each of the plurality of mobile units.

8. The system of Claim 1, wherein the means for receiving and the means for transmitting of a first mobile unit each respectively receive and transmit information from at least one other mobile unit of a series of mobile units, at least one of the series of units in wireless communication with the Internet.

9. The system of Claim 8, wherein the information comprises any one or more of electronic mail, images, streaming video, and streaming audio.

10. The system of Claim 8, wherein the information comprises information about status of a mobile unit and communication with the Internet comprises communication with a call center.

11. The system of claim 8, wherein the information comprises commercial transaction information, the information communicated to a party to the transaction via the Internet.

12. The system of Claim 2, further comprising communicating location data for at least some of the mobile units to a call center, the call center having means to analyze location data to produce traffic information.

13. The system of Claim 12, wherein the call center further comprises means to communicate to at least some of the mobile units the traffic information about an environment in the vicinity of the at least some mobile units.

14. The system of Claim 13, wherein the call center further comprises means to divert movement of mobile units based on traffic information.

15. The system of Claim 2, further comprising utilizing information about mobile unit proximity to each other to provide collision avoidance information to mobile units within a closer than predetermined distance from each other.

16. The system of Claim 15, wherein the collision avoidance information is timely provided to an occupant of a mobile unit at risk of collision.

17. The system of Claim 15, wherein the mobile units comprise automatic collision avoidance controllers receiving collision avoidance information in real time, and a controller of at least one mobile unit at risk initiates evasive action based on the avoidance information.

18. The system of claim 17, wherein a mobile unit at risk communicates risk related information with other mobile units at risk via onboard means for receiving and transmitting of the units.

19. The system of claim 18, wherein the risk related information comprises information analyzed by fusion techniques to confirm risk assessment and identify malfunctioning sensors.

20. A system for traffic control, the system comprising:

a plurality of mobile units, each mobile unit equipped with multiple onboard sensors for detecting traffic environment conditions surrounding the mobile unit, each mobile unit equipped with an onboard processor receiving inputs from the sensors, the processor in communication with means for wireless receiving and for means for wireless transmitting of detected information, the processor comprising means for selecting a path for communicating information processed by data fusion between at least one of the mobile units and a traffic communications center, the path comprising using wireless receiving means and wireless transmitting means of at least one other mobile unit.

21. The system of Claim 20, further comprising: using multi-sensor fused data to establish in real time a unique location of each of at least some of the plurality of mobile units, in closest proximity to a mobile unit that is communicating or about to communicate information.

22. The system of Claim 21, further comprising mobile units receiving input information about the real time location of other mobile units in proximity.

23. The system of Claim 21, further comprising communicating location data for at least some of the mobile units from the mobile units through a communications path comprising receiving and transmitting means of other mobile units to a center, the center having means to receive, store and analyze location data to develop traffic condition information.

24. The system of Claim 23, wherein the center further comprises means to communicate traffic condition information about an environment surrounding at least some mobile units to the at least some of the mobile units.

25. The system of Claim 24, wherein the call center further comprises means to communicate traffic condition information and divert movement of mobile units based on traffic condition information about an environment surrounding said mobile units.

26. The system of 22, further comprising data fusion of real time location information of mobile units in proximity to each other to obtain a better estimate of real time location of each of said units in proximity.

27. A system for improving vehicular safety by enhancing collision avoidance, the system comprising:

a vehicle comprising onboard multiple sensors for monitoring parameters of the environment and the vehicle related to collision risk assessment;

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an onboard processor receiving inputs from the sensors, the processor analyzing the inputs using data fusion techniques to determine collision risk related information; and means for altering a driver of the vehicle when a collision risk exceeding a threshold risk level is determined.

28. The system of claim 27, further comprising:
exchanging the collision risk information with vehicles in proximity to each other;
using data fusion to analyze exchanged information with data developed from sensor inputs at each vehicle in proximity; and
applying data fusion techniques to confirm a determined collision risk or otherwise.

29. The system of claim 27, further comprising communicating the collision risk related information to a traffic center or other party.

30. A system for enhancing vehicular safety and performance, the system comprising:
multiple sensors for multiple sensors for monitoring variables in a surrounding environment of the vehicle, and for, monitoring variables in vehicular mechanical and electrical systems;

an onboard processor receiving inputs from the sensors, at least two different types of sensors providing inputs pertaining to each of the monitored variables, the processor using fusion techniques to determine a best value of monitored variables; and
alerting a driver of the vehicle when a best value of a variable is outside a predetermined limit.

31. The system of claim 30, wherein the variables include vehicle speed, wheel speed, distance to nearest other vehicle, location, tire pressure, oil pressure, brake condition, fuel level, outside temperature, wheel slippage on pavement, and visibility limits.

32. The system of claim 30, wherein the sensors include radar, infrared sensors, GPS detectors and vehicular inertial sensors.